

Therapeutic Shoes

Style & Fit for People with Diabetes



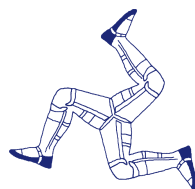
The content of this booklet is provided by Joseph M. Mozena, C.Ped, who has been contracted by the VA Medical Center in Portland, Oregon to provide certain pedorthic services to the veterans. His opinions are to reinforce your doctor's orders and not to replace the advice of your physician.

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Therapeutic Shoes are Insulin for the Feet

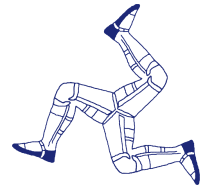


Shoes are of Supreme Importance

For People with Diabetes

Shoes are very important to a person with diabetes. Poorly fitted shoes are involved in as many as half of the problems that lead to amputations.

As a person with diabetes, you should begin to wear shoes and socks that pose no threat to your feet. You should have at least two pairs of shoes and should change them in the middle of the day or at least daily. Even a small area of high pressure can cause a problem if you wear the shoe all day, everyday. With more than one pair of shoes, pressures vary and ulcers are less likely.



The ABC's of Therapeutic Footwear are:

Always

Be

Checking

Peripheral Neuropathy

If you have peripheral neuropathy, you can no longer trust the “feel” of a shoe to determine proper fit. To obtain the same “feel” on your feet, you may incorrectly prefer a smaller size shoe because of lost sensations. Once protective sensation is lost, you are 15 times more likely to develop a foot ulceration.

**The longest nerves in the body are to the feet.
These nerves are the most often
affected by neuropathy.**

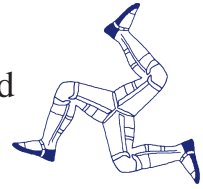
Proper Footwear

The American Diabetes Association states that the objectives of prescription footwear include:

- Relieve areas of excessive pressure to the bottom of the foot
- Reduce shock
- Reduce shear stress
- Accommodate deformities
- Stabilize and support deformities
- Limit motion of joints

Pedorthics

Pedorthics is the design, manufacture, modification and fit of shoes and foot orthoses to alleviate foot problems caused by disease, congenital condition, overuse or injury.



Certified Pedorthist (C. Ped.)

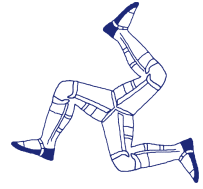
A certified pedorthist is a professional involved with pedorthics.

Some questions your Pedorthist may ask

- Do you have peripheral neuropathy?
- Do you have or have you had a foot ulcer? What caused the ulcer?
- Do you have a callus with bleeding in it?
- Do you have a callus?
- Do you have stiff joints?
- Do you have bunions?
- Do you have hammertoes?
- Do you have bumps on your foot?
- Do you have pain in your foot or leg?
- Have you experienced shoe problems?

About Shoe Fitting

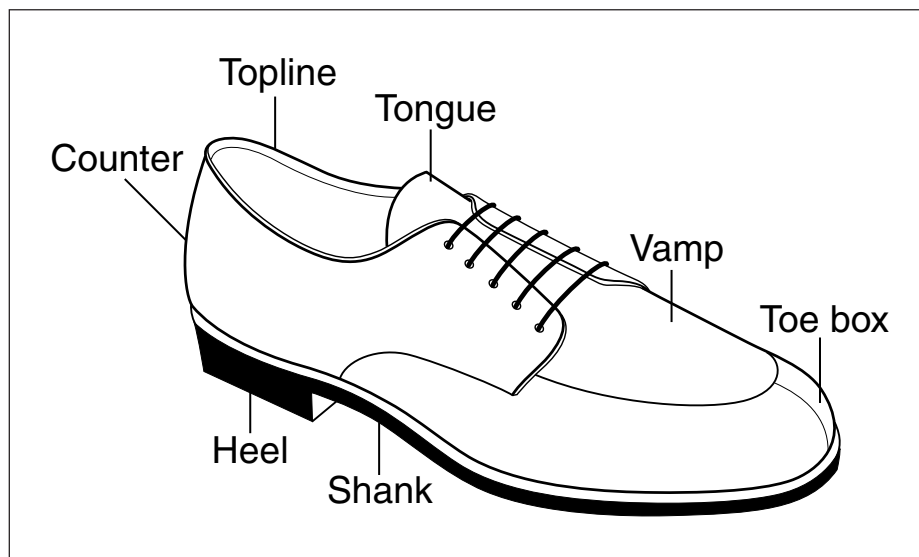
Always inform your shoe fitter that you are a person with diabetes



- You should be properly measured and fitted *every time* you buy new shoes. Be aware that your foot size and shape may change over time.
- Shoes should be purchased in the afternoon or evening when the foot is usually at its largest.

Therapeutic shoes are only useful if worn

Anatomy of a Shoe



Good Shoe Fit Criteria

- Shape - the shoe shape should match the foot shape.
- Extra depth molds (lasts) provide extra volume for the foot in the shoe, and also for any insole.
- Contour toe molded (lasted) shoes have more room in the big toe area.
- High wide toe boxes prevent toe crowding and pressure on the toes.
- Laced shoe are best because they provide the most adjustability.

Guidelines for Proper Shoe Fit

- Measure **both** feet each time you get new shoes.
- Fit both shoes while standing.
- The widest part of the foot should be in the widest part of the shoe.
- Shoes should be fit for arch length rather than overall length.
- 1/2 inch should be between the longest toe and the end of the shoe.
- A small amount of leather should be available to be pinched up at the vamp area of the shoe. Make sure you can wiggle all your toes.
- Snug fit around the heel.
- Good fit over the instep.
- The shoe should bend where the foot bends.
- Tread - the shoe fits securely, and you feel balanced and stable.
- You walk comfortably.

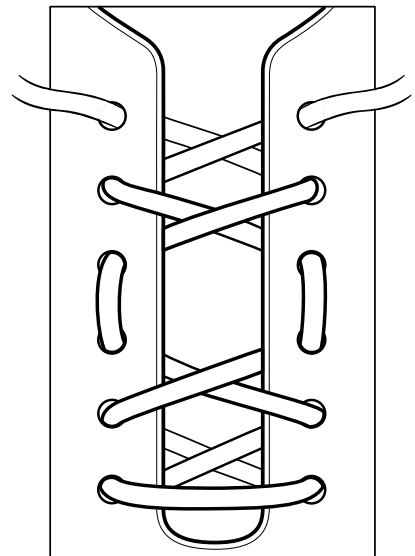
For A Better Fitting

- Shoes can be stretched or spot stretched for a better fit.
- Insoles and pads can help make a better fit.
- Lacing techniques may be used.

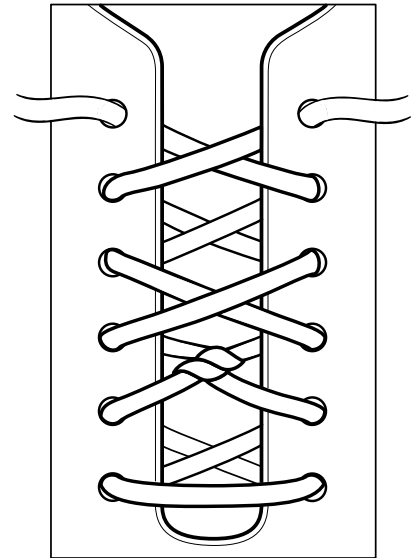
Shoe Lacing Techniques

To help your shoes fit, you can lace your shoes differently. Four different lacing patterns are shown.

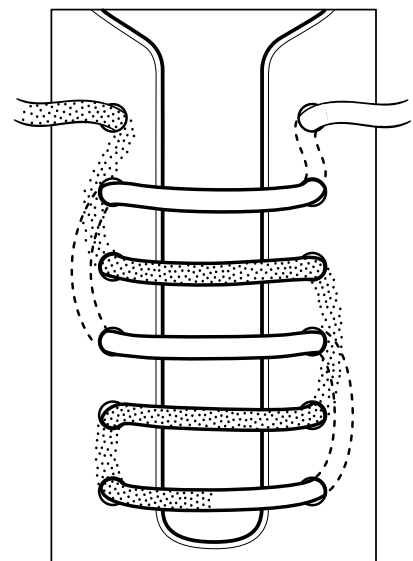
If you have bump or pain on the top of your foot, use the **Skip Lacing Technique**. At the point of your pain, do not cross your laces, instead skip the crossover and lace the shoestring to the next eyelet on the same side. The part of your foot with the bump or pain will not have pressure on it.



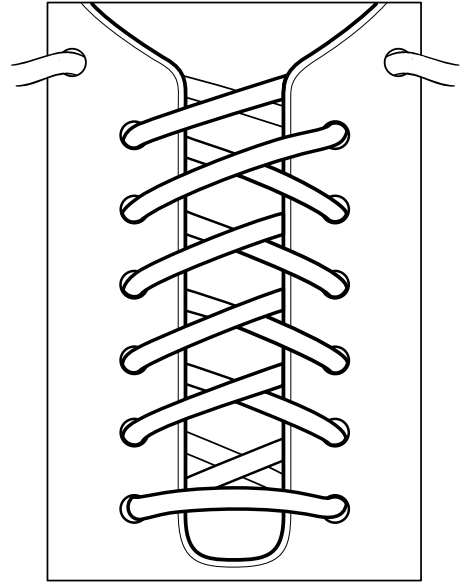
If you need more room in the toe area, but need to have a snug fit over the instep, use the **Stop Lacing Technique**. Lace your shoe as you normally do. Stop at the eyelet just before the spot where you want the shoe to fit more snugly. Then wrap one side of the shoelace under and over the other side of the shoelace. Do this a total of 2 times. Then go back to lacing your shoes as normal. When you pull the shoelaces, only the laces to this point will pull snug. The area on the toe side of the wrap will be loose.



If you have high arches or have pain in your arches, use the **High Arches Technique**. With this pattern, you do not crisscross the laces. Instead, you carry your lace straight across. Then skip down past the next eyelet on the same side and then go straight across. This pattern makes sure that there are no pressure points caused by the laces.



If the heels of your shoes slip or are loose, use the **Heel Fit Lacing Technique**. Lace your shoes in the usual way. Some shoes have an extra hole. Look for this extra hole and use it as an extra set of eyelets. Then tie your shoe.



Heel Slippage

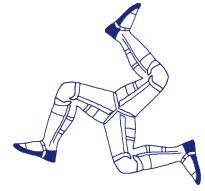
At times the heel will slip on a new shoe until the sole begins to bend and the heel of the shoe begins to ride with the foot.

- Heel grips may help reduce heel slippage.
- A tongue pad may push the foot back into the heel of the shoe.
- Lacing techniques may be used to help with heel slippage.
- Inserts may help with fit.
- Heel cups may be necessary.
- A little heel slippage is needed.

About Shoes

Therapeutic Shoe Characteristics

- Plenty of room in the toe area
- A shoe with lace closures or velcro straps
- A strong heel counter
- Padded collar and tongue
- Minimal seams in the upper
- Shock-absorbing sole
- Low heel
- Soft breathable upper



**Therapeutic diabetic footwear is effective
in reducing diabetic foot ulcerations**

Size

Shoe sizes are not standard, they vary among brands and styles.

Measurements

There are three commonly used measurements in determining a shoe selection:

- Overall foot length
- Arch length
- Width

Foot measurements are only a part of the shoe selection process.

Swelling

It is normal for feet to swell between 4% and 7% each day. To aid in proper fit, readjust by periodically re-lacing your shoes.

Shoe Categories & Styles

Shoe Choices

- Good choices include low heels, oxford, athletic shoes and Mary Janes.
 - Poor choices include slip ons, pumps, high heels, flip flops, sandals, backless and cowboy boots.
-

Dress Shoes

Dress shoes require a great deal of attention to style and fit for people with diabetes.

Work Shoes

Work shoes are specialized shoes that can include steel toes and boots. Acceptable types can be found for people with diabetes.

Casual Shoes

Casual shoes can be worn as an everyday shoe. Many styles are available for the person with diabetes.

Exercise Shoes

Each sport has its own shoe. You should wear the appropriate shoe for the appropriate sport. Good quality lace-up athletic shoes or walking shoes are good choices for people with diabetes, especially if they have a tall wide toe box. The “upper” should be a breathable material or leather. A good walking shoe will have a firm rigid heel counter, support, midfoot stability, forefoot flexibility and rearfoot cushion.

Custom Shoes

Custom shoes are for those people who cannot tolerate commercial footwear or even extra-depth shoes.

Special Occasions

When going on vacation or having guests, be aware that you should not significantly increase the amount of daily walking or use new footwear during these times.

Any special occasion shoes should fit as well as possible. People prone to foot problems should not wear a strange pair of shoes for more than an hour or two. After an hour check your feet for red spots, hot spots, blisters or sores. Bring your therapeutic shoes in case you need to change into them.

Slippers

Only approved slippers should be worn. The sole of the slippers should be thick and protective. The sole should also prevent stubbing of the toes by sticking out in front of the shoe. The slipper should fit properly and provide warmth if necessary. Slippers should not be worn in place of shoes, but used only a minimum amount of time.

Note

Carpeting does not prevent you from stepping on pins or needles, tacks or toys and any of the various things on the floor. Most car accidents happen within five miles of home. Likewise, there are many hidden dangers for your feet in your home. So wear your therapeutic shoes at home.

Shoes for Orthotics

Removable inlay

The shoes should have an inlay that can be removed and replaced with the orthotic.

Firm heel counter

Squeeze the heel counter, the heel stiffener should not collapse on either side of the heel. A firm heel counter prevents heel movement.

Torsional stability

Hold the bottom of the heel with one hand and the bottom of the forefoot with the other. Twist the shoe. This will be difficult to do with a good stable shoe.

Torsional stability provides rearfoot and midfoot support.

Shoe cut

It should not be cut excessively narrow at the shank, and the outside border should be relatively straight. This type of shoe will provide stability and will make it easier to fit an orthotic.

Old Shoes

Shoes You Wear

Wear only the shoes that have been discussed, seen and approved by your doctor and/or your pedorthist. Inspect the insides of shoes daily for foreign objects, nail points, torn lining and rough areas.

Bring in Your Shoes

- Bring in any shoe you wish to wear and have it approved.
- Give away or discard shoes that don't fit or are not approved.

New Shoes

Check Out Period

Although shoes should fit comfortably at the time of fitting, a “check out period” will give you a chance to prevent problems by early detection. Your check out period is different than breaking in new shoes because therapeutic shoes should be comfortable at the time of fitting.

Guidelines for Check Out

- New shoes should be “checked out” slowly. Wear new shoes one hour in the morning and one hour in the afternoon for three days, checking for red spots, hot spots, blisters or sores. If any signs are noticed, the shoes should not be worn. Contact your physician and/or pedorthist and make them aware of the findings. If no signs are noticed, then slowly increase the time you wear your shoes.
- Check your feet often during the first few weeks. You should check your feet three to five times a day.
- Have a family member help check your feet or use a mirror to see the bottom of your feet.
- Once checked out and rechecked by your pedorthist, your shoes and/or orthoses should be worn whenever you walk.
- Check feet everyday, once shoes are checked out.
- Check shoes weekly for signs of wear and tear and have them repaired or replaced accordingly. Check for broken laces or eyelets, torn or thinning interior linings, excessive outsole wear or sole/midsole compression.
- Always wear socks with your shoes and orthoses.

Therapeutic shoes are to be worn at home as well as outside the home

At Least Two Pairs of Shoes

The person with diabetes should have at least two pairs of shoes. The shoes should be changed daily or in the middle of the day. Friction points, hot spots or areas of high pressure can cause a problem if the shoe is worn all day, every day.

Remember

**Before putting shoes on:
Take It Out
Shake It Out
Check It Out**

- Before putting on your shoes, take out your insert and shake out your shoes and inserts. Then check your shoes, inside and out. You should look inside for foreign objects, torn linings or wear spots. Check out the bottoms of your shoes for nails, tacks, staples, glass, etc.
- Shoes can be changed at midday and in the evening. A single pair of shoes should not be worn more than five hours.
- Prescription shoes should be changed at least once a year. Some insoles need to be changed at least three times a year. Remove the shoe's insert before placing in your orthotic.
- On return visits to your pedorthist, you should note any successes or problems with your footwear.
- You and your doctor and/or your pedorthist must inspect shoes for periodic replacement.
- When your doctor has ordered your therapeutic shoes, you should wear them.

Never Walk Barefoot

Puncture Wounds & Injuries

Never walk barefoot, even in your own home, because people with diabetes are at higher risk for puncture wounds. Walking barefoot can cause injuries to your foot from needles in carpets to burns on hot sand.

Pressures

- Pressures (repetitive or excessive) cause ulcers.
- Pressures are reduced under the feet when wearing most forms of low heeled footwear compared to walking barefoot or in socks.
- Padded socks can reduce pressures.

Purpose of Shoes

- To protect you from the environment such as rocks, concrete, and the multitude of other things you find on the ground.
- To protect you from thermal changes such as the hot sun and the cold snow.
- Dark colored shoes can be substantially hotter than lighter colored shoes in the sun.
- Proper footwear provides support to allow the foot to function in the activities of daily living.

Shoe Care

Shoe Trees

A shoe tree helps maintain the original shape of the shoe. It also helps maintain the original fit and comfort. Every pair of shoes and boots should have shoe trees in them when not in use.

Shoe Polishes & Lubricants

These are not only for cosmetic purposes but are also used as shoe lubricants and preservatives.

Shoe Ventilation

Shoes need drying out. An average pair of feet give off a half pint of moisture daily. This is why the same pair of shoes should not be worn on consecutive days, but allowed a day or two to dry out.

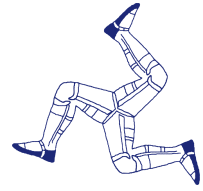
Shoe Hygiene

Shoe hygiene is as important as foot hygiene. Give your shoes a day long airing in the sun every couple of weeks. Use an antifungal spray inside the shoes everyday. If you have an ultraviolet lamp, give the shoe interiors a lamp treatment for a few hours once a month.

Runover Heels & Counters

Runover heels and counters should be a signal for new shoes.

Supplemental Information



Foot Friendly Tips

- Remove your shoes a few times a day.
- Wiggle your toes, do your foot exercises.
- Give your feet a little massage.
- Take a break and re-lace your shoes. Feet normally swell later in the day.
- Get up and walk around for a few minutes if you have been sitting for an hour. Get the circulation going to your feet.
- If on a plane get up from your seat.
- If on a long drive stop at rest stops to walk around.

Foot Orthotics

An orthotic is an in-shoe medical device which is designed to alter the forces acting on the bottom of the foot in order to allow more normal foot and leg function and to decrease abnormal forces on the foot and leg during weightbearing activities. An orthotic can be accommodative, functional or a combination.

- An accommodative orthotic mainly relieves pressure, shock and/or shear forces.
- A functional orthotic mainly controls alignment and motion.

One type of “accommodative orthotic” is the total contact orthotic (TCO). This type of orthotic touches all of the bottom of the foot. The type of orthotic most commonly prescribed for a person with diabetes is a TCO. If you have callus this may redistribute pressure away from this area.

**The most common cause of a foot wound
is shoes**

Socks for People with Diabetes

- Should prevent the skin from friction. Socks that prevent blisters are helpful.
- Should provide pressure relief through cushioning. Padded socks decrease pressure.
- Should remove perspiration from the skin.
- Should help regulate the temperature of the foot.
- Should be the proper size.
- Socks with flat or low profile seams or without seams are best for insensitive feet.
- The top edge should not be too tight or constricting.
- Socks with holes should be discarded.
- Some synthetic fibers wick away moisture from the skin, keeping the skin drier.
- Microsafe fibers inhibit the growth of bacteria and fungi.
- Change your socks everyday.
- Always wear socks with your shoes.

Padded Socks for people with diabetes are part of the cushioning system in therapeutic shoes

When to Seek Assistance

- You should know when, how, whom to contact regarding leg and feet problems.
 - Report the following: any breaks in the skin, or discoloration that does not begin to heal after 2 or 3 days, swelling of the limbs, abnormal shapes, burns, frostbite or infection.
 - You should have a specific name and number of whom to call.
-

- In an emergency, please call 911.
- You should call with any problems or concerns you have regarding your legs or feet.

Cascade Call Center
Toll free 1-888-233-8305

24 hours/day, 7 days/week

Option 1 - Customer Service Representative

Option 2 - Advice Nurse

Pharmacy Auto Refill: 503-273-5201

Glossary

Counter

Something that stiffens the back of the shoe.

Diabetes

A disease of various origins that causes an unbalanced metabolism and hyperglycemia due to either a deficiency of insulin or a resistance to the function of insulin. It is a disease of complications.

Inlay

Prefabricated removable material which the foot rests inside the shoe. It comes with the shoe.

Insert

A type of orthosis, that is placed in the shoe after it is made.

Insole

Part of the shoe that is attached to the upper, toe box heel counter, linings and/or welting.

Last

The mold on which the shoe is assembled. It forms the shape, size and some of the style of the shoe.

LOPS

Loss Of Protective Sensation. If you cannot feel the plastic wire of the 10 gram monofilament test, you do not have enough feeling to protect yourself from injury.

Pedorthist

A shoe therapist.

Peripheral Neuropathy

A problem of nerve function that is outside the brain and spinal cord. It can be caused by high blood glucose. It may present as tingling, numbness, weakness, burning pain, loss of reflexes or other manifestations. This is a complication of diabetes.

Style

A shoe's basic design. The seven basic styles are oxford, boot, sandal, clog, mule, pump and moccasin. Style should not be confused with fashion.

Therapeutic Shoe

The use of a shoe as in the treatment of some foot disorder.

Toe Box

The front part of the shoe where the toes fit in.

Tread

The bottom of the shoe, including the sole and the heel.

Ulcer

An open sore that does not heal right away.

Vamp

The complete front of the top of the shoe.